WHAT IS CLAIMED IS:

1.   In a computer system including a server accessing a database and a magnetic tape drive, a method for locating a group of audit files from said database on tape, said method comprising the steps of:

5   (a)   creating a Tapeset for said group of audit files;

(b)   initializing a disk directory file to hold positional information of said Tapeset;

(c)   for each audit file within said group of
10   audit files, locating said audit file within said Tapeset using said positional information.

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2.   The method as in Claim 1 wherein said group of audit files consists of one or more audit files.

3.   The method as in Claim 1 wherein said step of locating said audit files within said Tapeset also applies to an already existing Tapeset and an already existing disk directory file.

4.   The method as in Claim 1 wherein said step for creating said Tapeset includes the steps of:

　　　　　(a1) selecting a name to uniquely identify said group of audit files;

5　　　　(a2) creating a tape volume marker file with said name;

　　　　　(a3) writing said tape volume marker file to each volume within said Tapeset;

5.   The method as in Claim 1 wherein said step for initializing said disk directory file includes the steps of:

　　　　　(b1) creating a disk directory file;

5　　　　(b2) inserting a disk record as a first entry in said directory file.

6.   The method as in Claim 1 wherein said step of locating said audit file within said Tapeset includes the steps of:

(c1) determining if said step of locating said audit file is for appending or for retrieving said audit file;

(c2) if said step of locating said audit file is for appending purposes, appending said audit file to said Tapeset;

(c3) if said step of locating said audit file is for retrieving purposes, retrieving said audit file from said Tapeset.

7.   The method as in Claim 6 wherein said step of
appending said audit file includes the steps of:

(c2a) opening said tape volume marker
file;

5   (c2b) opening said disk directory
file;

(c2c) determining a tape volume
within said Tapeset for an audit file
number preceding said audit file
10   using information from said disk
directory file;

(c2d) if said tape volume is not
loaded on said magnetic tape drive,
closing a logical tape for said tape
15   volume and displaying a message to
load said tape volume;

(c2e) fast-locating to an end
position of said preceding audit file
number using information from said
20   disk directory file;

(c2f) closing said logical tape for
said tape volume;

(c2g) appending said audit file at
said end position;

25   (c2h) updating said disk directory
file with information of said audit
file.

8.   The method as in Claim 6 wherein said step of retrieving said audit file includes the steps of:

(c3a) opening said tape volume marker file;

5   (c3b) opening said disk directory file;

(c3c) determining a tape volume within said Tapeset for an audit file number matching said audit file using

10   information from said disk directory file;

(c3d) if said tape volume is not loaded on said magnetic tape drive, closing a logical tape for said tape

15   volume and displaying a message to load said tape volume;

(c3e) fast-locating to an end position of said matching audit file number using information from said

20   disk directory file;

(c3f) closing said logical tape for said tape volume;

(c3g) opening said audit file at said start position of said matching audit

25   file number.

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9.   The method as in Claim 7 wherein said step of updating said disk directory file with information of said audit file includes the steps of:

> (c2ha) creating an audit record entry in said disk directory file;
>
> (c2hb) obtaining a starting position of said audit file;
>
> (c2hc) recording said starting position into said audit record entry;
>
> (c2hd) obtaining an end position of said audit file;
>
> (c2he) recording said end position into said audit record entry.

10.   A storage medium encoded with machine-readable computer program code for locating a group of audit files from a database maintained on tape, wherein, when the computer program code is executed by a computer, the
5   computer performs the steps of:

(a)   creating a Tapeset for said group of audit files;

(b)   initializing a disk directory file to hold positional information of said Tapeset;

10   (c)   for each audit file within said group of audit files, locating said audit file within said Tapeset.

11.   The method as in Claim 9 wherein said group of audit files consists of one or more audit files.

12. The method as in Claim 10 wherein said locating step of said group of audit files also applies to an already existing Tapeset and an already existing disk directory file.

13.   The method as in Claim 10 wherein said step for creating said Tapeset includes the steps of:

        (a1) selecting a name to uniquely identify said group of audit files;

5   (a2) creating a tape volume marker file with said name;

        (a3) writing said tape volume marker file to each volume within said Tapeset;

14.   The method as in Claim 10 wherein said step for initializing said disk directory file includes the steps of:

        (b1) creating a disk directory file;

5   (b2) inserting a disk record as a first entry in said directory file.

15.   The method as in Claim 10 wherein said step of locating said audit file within said Tapeset includes the steps of:

(c1) determining if said step of locating said audit file is for appending or for retrieving said audit file;

(c2) if said step of locating said audit file is for appending purposes, appending said audit file to said Tapeset;

(c3) if said step of locating said audit file is for retrieving purposes, retrieving said audit file from said Tapeset.

16.   The method as in Claim 15 wherein said step of appending said audit file includes the steps of:

(c1a) opening said tape volume marker file;

(c1b) opening said disk directory file;

(c1c) determining a tape volume within said Tapeset for an audit file number preceding said audit file using information from said disk directory file;

(c1d) if said tape volume is not loaded on said magnetic tape drive, closing a logical tape for said tape volume and displaying a message to load said tape volume;

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(c1e) fast-locating to an end position in said tape volume of said preceding audit file number using information from said disk directory file;

(c1f) closing said logical tape for said tape volume;

(c1g) appending said audit file in said tape volume at said end position;

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(c1h) updating said disk directory file with information of said audit file.

17.   The method as in Claim 15 wherein said step of retrieving said audit file includes the steps of:

(c2a) opening said tape volume marker file;

5   (c2b) opening said disk directory file;

(c2c) determining a tape volume within said Tapeset for an audit file number matching said audit file using information from said disk directory file;

10   (c2d) if said tape volume is not loaded on said magnetic tape drive, closing a logical tape for said tape volume and displaying a message to load said tape volume;

15   (c2e) fast-locating to an end position of said matching audit file number using information from said disk directory file;

(c2f) closing said logical tape for said tape volume;

20   (c2g) opening said audit file at said end position.

18.   The method as in Claim 16 wherein said step of updating said disk directory file with information of said audit file includes the steps of:

> (c3a) creating an audit record entry in said disk directory file;

> (c3b) obtaining a starting position of said audit file;

> (c3d) recording said starting position into said audit record entry;

> (c3e) obtaining an end position of said audit file;

> (c3f) recording said end position into said audit record entry.

19.   In an apparatus wherein a computer server (15) communicates with a database (14) and magnetic tape drive (18) while utilizing a data management system (16) and COPYAUDIT program (17), a system for tracking and retrieving audit files on multiple tape reels comprising:

(a)   means to create a Tapeset having Tapeset numbers which identify the tape reel on which audit files are residing;

(b)   means to set-up a disk directory file for holding positional information indicating said Tapeset;

(c)   means for retrieving said audit files from a tape reel for backup on disk of said database.

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